

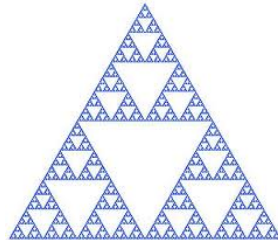
Chapter 5 Angles, Similarity, Transformations

5.5 Lesson Properties of Parallel Lines

Unit Question: How do we create from investigating similarities and differences?

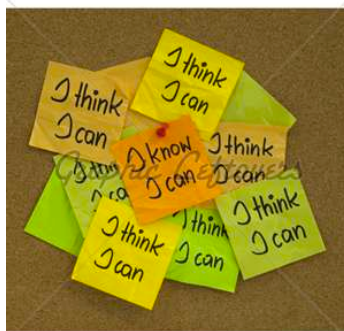
Learner Profile: Reflective

Area of Interaction: Human Ingenuity



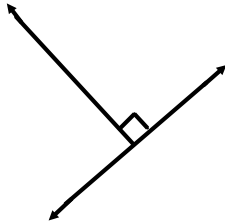
I Can Statement:

I can use properties of parallel lines to solve real life problems

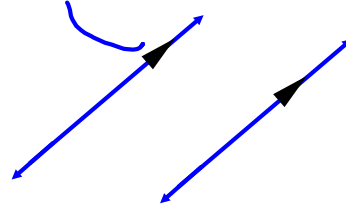


Key Vocabulary

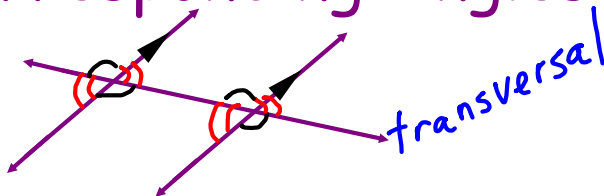
Perpendicular Lines



Parallel Lines

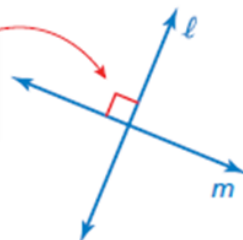


Corresponding Angles



Understanding the pictures

Indicates lines ℓ and m are perpendicular.

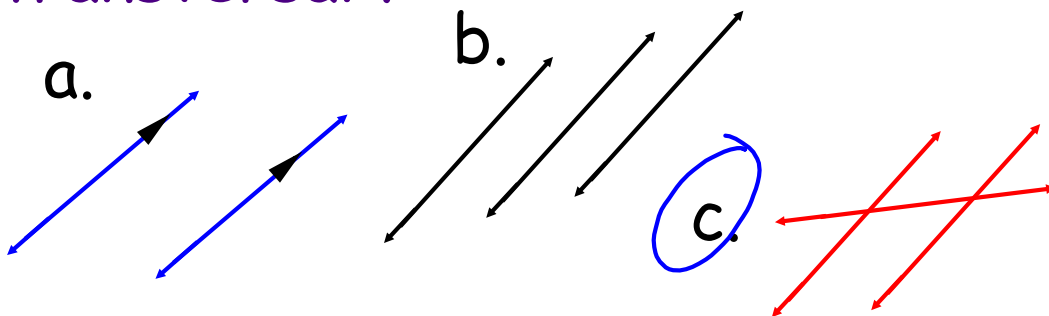


Indicates lines p and q are parallel.



Remember vocabulary from yesterday:

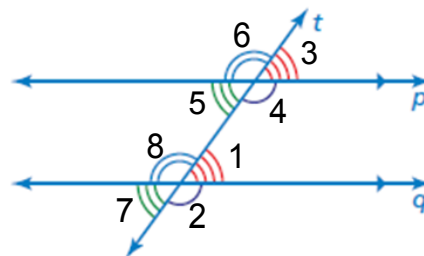
Which picture below shows a transversal ?



Key Idea

Corresponding Angles

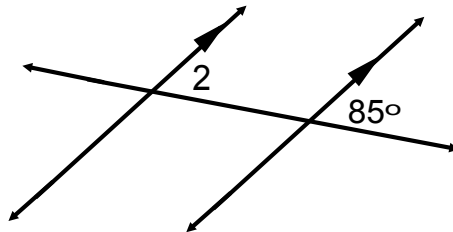
When a transversal intersects parallel lines, corresponding angles are congruent.



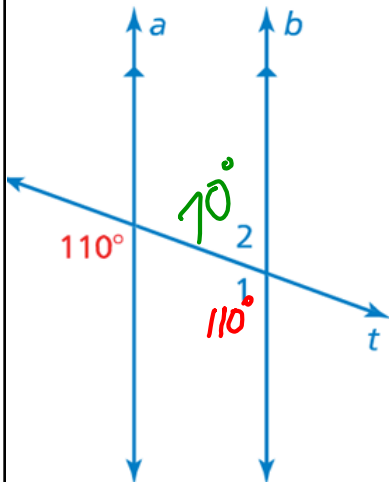
Corresponding angles

$\angle 1$ and $\angle 3$ are corresponding. Can you name another pair of corresponding angles?

When a transversal intersects two parallel lines, the corresponding angles formed are congruent



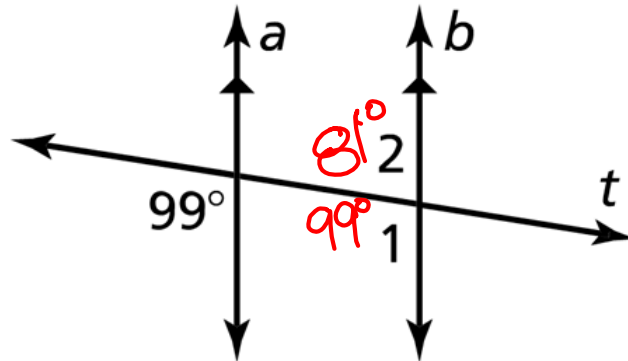
If $\angle 1 = 85^\circ$ what does $\angle 2$ equal?



Use the figure to find the measures of $\angle 1$ and $\angle 2$.

2

Use the figure to find the measures of
(a) $\angle 1$ and (b) $\angle 2$.



On Your Own

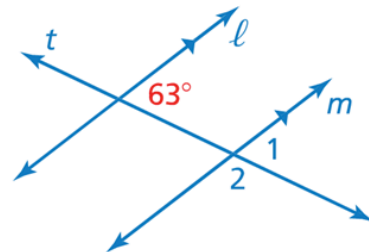
Use the figure to find the measure of the angle. Explain your reasoning.

1. $\angle 1$

2. $\angle 2$

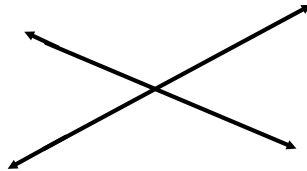
63°
Corresponding

117°
Supplementary

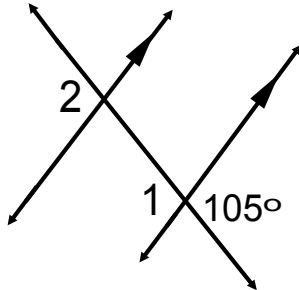


Remembering more vocabulary

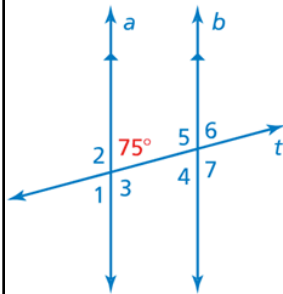
Vertical Angles



What is true about vertical angles?



Find the
measure of $\angle 1$
and $\angle 2$.

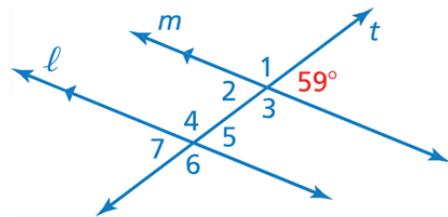


Use the figure to find the measures of the numbered angles.

$$\begin{aligned}\angle 1 &= 75^\circ \\ \angle 2 &= 105^\circ \\ \angle 3 &= 105^\circ \\ \angle 4 &= 75^\circ \\ \angle 5 &= 105^\circ \\ \angle 6 &= 75^\circ \\ \angle 7 &= 105^\circ\end{aligned}$$

On Your Own

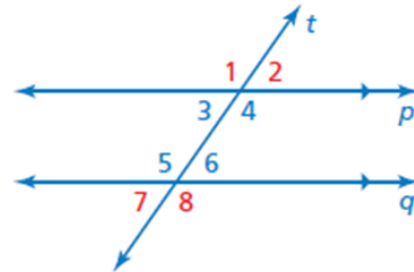
- Use the figure to find the measures of the numbered angles.



When two parallel lines are cut by a transversal, four **interior angles** are formed on the inside of the parallel lines and four **exterior angles** are formed on the outside of the parallel lines.

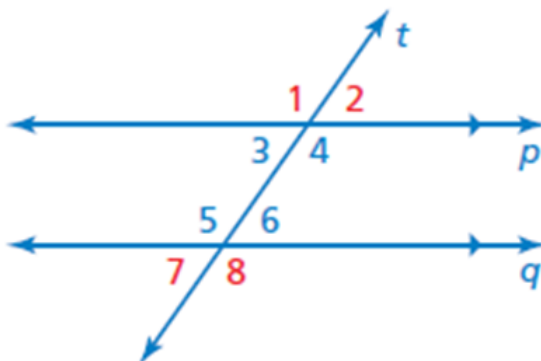
$\angle 3$, $\angle 4$, $\angle 5$, and $\angle 6$ are interior angles.

$\angle 1$, $\angle 2$, $\angle 7$, and $\angle 8$ are exterior angles.



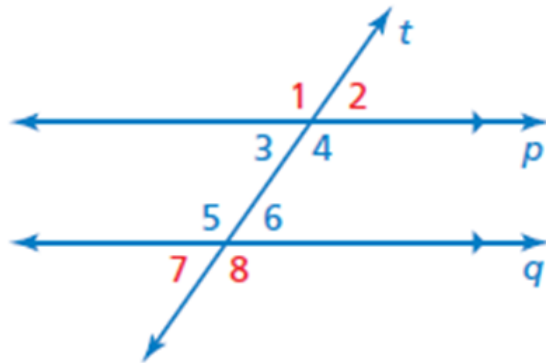
$\angle 1$ and $\angle 8$ alt. exterior
 $\angle 7$ and $\angle 2$ " "
 $\angle 4$ and $\angle 5$ alternate interior
 $\angle 3$ and $\angle 6$ " "

Some of the exterior angles are called alternate exterior angles



$\angle 1$ and $\angle 8$ are alternate exterior angles. Can you name the other pair of alternate exterior angles?

Some of the interior angles are called alternate interior angles



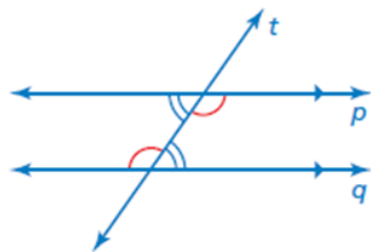
$\angle 3$ and $\angle 6$ are alternate interior angles. Can you name the other pair of alternate interior angles?



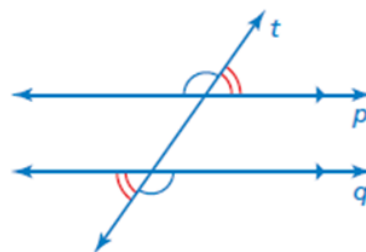
Key Idea

Alternate Interior Angles and Alternate Exterior Angles

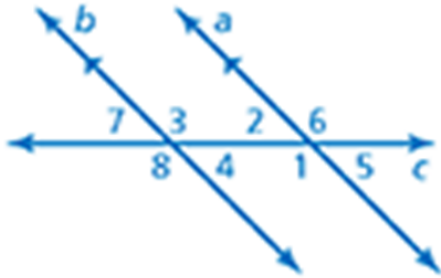
When a transversal intersects parallel lines, alternate interior angles are congruent and alternate exterior angles are congruent.



Alternate interior angles

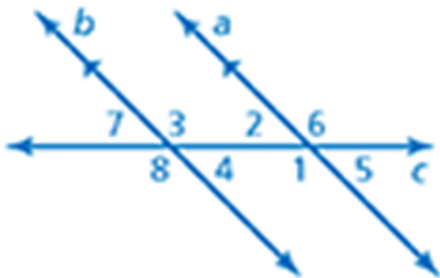


Alternate exterior angles



Name a pair of alternate exterior angles:

Name a pair of alternate interior angles:



If $\angle 6 = 125^\circ$ what is the measure of $\angle 8$?

Assignment:

p. 217-218
2-8even, 10, 11,
14-22even

